

REMARKS

Claims 1-32 are pending in this application and have been rejected. Claim 3 is currently cancelled. Claims 1-2, 5 and 7 are amended herein. Applicant respectfully requests reconsideration of the claims in view of the following remarks.

Applicant acknowledges Examiner's withdrawal of the objection to the title, in response to the amendment to the title made May 25, 2005. However, in examining the published application, Publication No. 2005/0186722 A1, published August 25, 2005, Applicant discovered the title has a typographical error. The title should read "Method and Structure for CMOS Devices" but instead reads "Method and Structure for CMOS Device" . Applicant requests that the Examiner assist in clarifying the title so that in a published patent, it will read correctly.

The Examiner rejected Claims 1-32 under 35 U.S.C. §102(e) as anticipated by Shimizu, et al., (U.S. Patent Application 2004/00293323 A1). This rejection is hereby respectfully traversed.

This rejection was maintained from the previous action. Applicants respectfully submit that the Shimizu reference cannot meet the requirements of an anticipating reference under 35 U.S.C. §102(e).

In the remarks, the Examiner asserted that with respect to Claims 1 and 14 that the Shimizu reference discloses a "similar" device and method. With respect to the claim element requiring that ions be implanted, the Examiner recites the general language in the Shimizu reference that "any ions are usable."

The crux of the rejection made by the Examiner is the argument that a list of ions which are semiconductor dopants (e.g., "Ar, Ge, Si, As, Sb, In, BF2 or the like," in Shimizu paragraph

106) and the statement, "any ions are usable without limitation," in paragraph 111 is an anticipation of the specifically disclosed and claimed improvement in Applicant's claimed invention, that is, oxygen or carbon-containing ions. Applicant submits that this teaching cannot anticipate the claimed invention.

The use of the catchall phrase "any ions are usable without limitation" is not a teaching of the ions advantageously claimed by Applicant. Taking the reference as a whole, the reference teaches the use of ions, which are dopant impurities, as described above. There is no teaching of carbon or oxygen as ions to be implanted to relax the silicon nitride layer. Shimizu is thus cumulative to the prior art described in Applicant's background, which includes implanting Ge ions to relax a silicon nitride layer.

As argued in a prior response, Applicant submits that the reference does not meet the standards for anticipating references. The standard for anticipation under 35 U.S.C. § 102 has been addressed repeatedly by the Court of Appeals for the Federal Circuit and it is well settled law that to anticipate, every element of a claimed invention must be found in a single prior art reference, *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed.Cir. 997), the reference must disclose "every limitation of the claimed invention" *Mehl/Biphile International Corp. v. Milgraum*, 192 F.3d 1362, 1365, 52 USPQ2d 1303, 1306 (Fed.Cir.1999). This standard applies to patentability of an application as well as defense to an infringement suit, an "anticipation rejection requires a showing that each limitation of a claim must be found in single reference, practice or device," *In re Donohue*, 766 F.2d 531, 534, 226 USPQ 612, 621 (Fed. Cir. 1985). A reference which fails to provide each claimed element does not anticipate, as stated by the court in *RCA Corp. v. Applied Digital Data Sys., Inc.*, "exclusion of a claimed element from a prior art reference is enough to negate anticipation," 730 F. 2d, 1440, 1444, 221 USPQ 385,

288 (Fed. Cir. 1984). This standard is also recited in the MPEP at § 706.02, paragraph IV, "...for anticipation under 35 U.S.C § 102, (the) reference must teach every aspect of the claimed invention either explicitly or impliedly."

Further, the disclosure of an unlimited number of alternatives as a genus in a prior art reference does not anticipate a later claimed species, without more disclosure suggesting the use of the species. In *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, the court ruled that the generalized disclosure of a range, which could include the specific claims, is not literal identity, as required to be anticipatory, 976 F.2d 1559 at 1572 (Fed. Cir. 1992). In *Minnesota Mining*, the court found the range disclosed to be "so broad as to be meaningless".

Here, the Shimizu reference makes a disclosure so broad as to be entirely meaningless. The statement that "any ions are usable without limitation" is clearly factually erroneous if taken literally. Ions, which are known to damage semiconductor structures, such as sodium, for example, are clearly not usable in the implantation method disclosed by the reference. Applicant believes that the statement "any ions" in fact refers back to the earlier listed impurities, that is, the list of dopant impurities specifically listed by the reference. To take the literal meaning of the phrase "any ions are usable without limitation" to cover the specific ions claimed by Applicant here, is to place the rejection squarely within the proscribed analysis of *Minnesota Mining*.

Accordingly, Applicant respectfully submits that the claims 1 and 14, rejected by the Examiner under the argument that Shimizu anticipates the silicon nitride layer having oxygen-containing or carbon-containing ions, are in fact not anticipated because the claimed elements are

not shown, taught or suggested, and that these claims are therefore allowable over the reference. Reconsideration and allowance are therefore respectfully requested.

Claims 2 and 4-7 depend from Claim 1 and are therefore believed to incorporate elements not shown, taught or suggested by the reference. Reconsideration and allowance are therefore requested. Claims 15-24 likewise, recite additional method steps on the allowable ion implantation steps of Claim 14, and are therefore likewise believed to be allowable over the reference. Reconsideration and allowance are requested.

Claim 8 and its dependent claims 9-13 were likewise rejected over Shimizu. First, the Examiner admits that the reference does not provide a contact etch stop silicon nitride layer, as required, but asserts that the layer taught by Shimizu is capable of this intended use. Applicant finds nothing in Shimizu to suggest that there is any intention to form contacts through the silicon nitride layer of Shimizu, contacts could be formed away from the silicon nitride layer described and so Applicant believes that the assertion by Examiner is in error. Further, and as argued above with respect to Claims 1 and 14, Claim 8 recites a structure including a layer containing oxygen-containing or carbon-containing ions. Nothing in Shimizu suggests forming such a silicon nitride layer, thus the reference cannot anticipate Claim 8. Reconsideration is therefore requested.

Claims 9-13 depend from and incorporate the elements of Claim 8, which is believed to be allowable. Accordingly, these claims are also believed to be allowable over the reference relied upon. Reconsideration and allowance are therefore requested.

Claims 25-32 are method claims, which are also rejected over Shimizu. With respect to Claim 25, Applicant's claimed method requires the step of implanting oxygen-containing or carbon-containing ions into a silicon nitride layer. As the reference does not disclose the use of

the required ions, this claim is not anticipated. Accordingly, reconsideration and allowance are requested. Claims 26-32 are method claims, which recite additional method steps on the steps of Claim 25. As these dependent claims incorporate the allowable method steps of Claim 25, these claims are also believed to be allowable. Reconsideration and allowance are therefore respectfully requested.

Claims 1-13 were also rejected under 35 U.S.C. §102(e) over Shimizu under a "product by process" claims analysis. This rejection is also hereby respectfully traversed.

First, Applicant again submits that the reference does not teach the required carbon-containing or oxygen-containing ions. Second, Applicant submits that the product claimed requires the presence of carbon-containing or oxygen-containing ions in the silicon nitride layer. Thus, since the reference does not disclose these ions for implantation, the reference cannot anticipate the claimed product, even though the reference teaches (as described as prior art in the background of the instant application) ion implantation to relax stress in a silicon nitride layer.

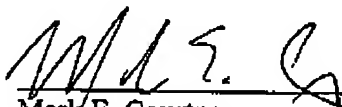
Accordingly, Applicant believes that irrespective of the correctness of the Examiner's conclusion that the claims are product by process claims, the recited claim elements are not shown, taught or suggested by the relied-upon reference and that therefore, Claims 1-13 are allowable over the reference.

Applicant has made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Mark E. Courtney, Applicant's attorney, at 972-732-1001 so that such issues may be resolved as expeditiously as possible. No fee is believed due in connection with this filing. However, should one be deemed due, the Commissioner is hereby authorized to charge Deposit Account No. 50-1065.

Respectfully submitted,

September 21, 2005

Date


Mark E. Courtney
Attorney for Applicant
Reg. No. 36,491

Slater & Matsil, L.L.P.
17950 Preston Rd., Suite 1000
Dallas, Texas 75252-5793
Tel. 972-732-1001
Fax: 972-732-9218